



# ***LAB Online Exhibition***



# **Model JL-2000 v.1.2** **Leather Moisture Meter**

## **Owner's Manual**

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### **JL-2000 FEATURES**

- %MC range in Leather 10.0%-28.0%
- Digital readout
- Built-in calibration check
- Averages up to 100 accumulated readings
- Proven microcontroller circuit for increased reliability and accuracy
- Connector for external electrode
- 9 volt battery – included
- Carrying case - included
- 1 Year Warranty

### **KEY SWITCH FUNCTIONS**



Read key (#1) Reads the %MC



Check key (#2) Checks the meter calibration. Displays the average of up to 100 accumulated readings; displays the highest stored reading; erases the readings.

### **CALIBRATION CHECK**

Press and hold the calibration check key (#2) and the read key (#1) simultaneously. Meter is in calibration if it displays 17% ( $\pm 0.2$ ).

If the meter does not display 17% it is likely an indication of a low battery. Change the battery immediately. If the instrument still does not indicate a correct calibration, return it to DELMHORST for service. See the Service For Your Meter section.

## **CHANGING THE BATTERY**

The battery compartment is located on the back of the meter handle. Use only a 9v alkaline. When the battery is removed and then reconnected, the meter displays its software version for one second and then turns itself off.

A hard Reset may be required if, after changing the battery, the display is frozen. This is sometimes caused by the interruption of contact between the battery and the battery lead wire. Resolve this as follows: Disconnect the battery. Press and hold the Read key for 15 seconds. Release the Read key. Press and hold the Check key for 15 seconds. Release the Check key. Connect a fresh battery to the lead wire in a single action, making sure to align the poles properly and without interrupting contact. If the display remains frozen, repeat the procedure. If this procedure does not resolve the problem, refer to the Service For Your Meter Section.

## **TAKING A READING**

- **Remove the protective cover** from the top of the meter. Check that the contact pins #2497/A-100 are firmly hand-tightened.
- **Press the read key (#1)**. The meter displays the %MC for two seconds.
- **To add a reading** to the sum of all the previously stored readings, release the read key within two seconds.
- **If you press and hold the read key** the meter will repeat its read cycle but will not add a new reading to memory.

## **INFORMATION ABOUT YOUR READINGS**

Readings below 10.0% are displayed with a “-” sign. Readings above 28% are displayed as a blinking “28”. Neither are added to the accumulated readings or used in calculation of average or highest reading. Only readings between 10% and 28% are included in the accumulation, highest, and average calculation.

The meter will accumulate up to 100 readings. After all 100 readings are stored, the meter will not add new readings until the memory has been cleared. It will also continue to display the average of all 100 readings as a reminder that the memory is full.

The temperature of the leather may affect accuracy of the readings. As the leather temperature increases, its electrical resistance decreases and indicated moisture content rises. The lower the temperature, the lower the indicated moisture content. Depending on the temperature and moisture content, a “correction” may be required.

The meter is calibrated at 70°F (20°C). No correction is necessary if the leather temperature is between 50°F and 90°F. As a guideline, for every 10 degrees less than 50 add one point to the reading; for every 10 degrees higher than 90, subtract one point from the reading.

## **TO CHECK THE ACCUMULATED READINGS**

This feature displays the total number of accumulated readings, the average of those readings, and the highest stored reading.

- **To view the readings**, press and release the calibration check key (#2). The meter displays the number of accumulated readings for one second, then the average of those readings for two seconds. Then it displays the highest stored reading for two seconds. The total cycle time is five seconds.
- **To keep the accumulated readings in memory**, release the calibration check button (#2) before the total cycle time is complete.
- **To erase all the accumulated readings**, hold the calibration check button (#2) for more than five seconds. All the accumulated readings will be erased and the meter will display “0.”

## **CARE OF YOUR METER**

To keep your meter in good working order:

- Store your meter in a clean, dry place. The protective carrying case provided is an ideal storage place when the meter is not in use.
- Change the 9-Volt battery as needed. Continued use with a low battery may cause the meter to go out of calibration.
- Change contact pins as needed. Keep pin retainers hand-tightened.
- Clean the meter and contact pins with any biodegradable cleaner. Use the cleaner sparingly and on external parts only. Keep cleaner out of the external connector.

- Remove the battery if the meter will not to be used for one month or longer.

## **SERVICE FOR YOUR METER**

**If your meter is not working properly, replace the battery with a new one and check the calibration. If this does not resolve the problem go to [www.delmhorst.com](http://www.delmhorst.com) and follow the instructions under Support. If you require further assistance please call 877-DELMHORST (335-6467) OR 973-334-2557**

## **WARRANTY**

Delmhorst Instrument Co., referred to hereafter as Delmhorst, guarantees its JL-2000 meter for one year from date of purchase and any optional electrodes against defects in material or workmanship for 90 days. If, within the warranty period of the JL-2000, you find any defect in material or workmanship return the meter following the instructions in the **Service for Your Meter** section. This limited warranty does not cover abuse, alteration, misuse, damage during shipment, improper service, unauthorized or unreasonable use of the meter or electrodes. This warranty does not cover batteries, pin assemblies, or pins. If the meter or any optional electrodes have been tampered with, the warranty shall be void. At our option we may replace or repair the meter. Delmhorst shall not be liable for incidental or consequential damages for the breach of any express or implied warranty with respect to this product or its calibration. With proper care and maintenance the meter should stay in calibration; follow the instructions in the **Care of Your Meter** section.

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The express warranty set forth above constitutes the entire warranty with respect to Delmhorst meters and electrodes and no other warranty, written, oral, or implied applies. This warranty

is personal to the customer purchasing the product and is not transferable.

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